

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 101258-1 WO	FOR FURTHER ACTION	See item 4 below
International application No. PCT/SE2005/000013	International filing date (<i>day/month/year</i>) 05 January 2005 (05.01.2005)	Priority date (<i>day/month/year</i>) 09 January 2004 (09.01.2004)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant ASTRAZENECA AB		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

 In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input checked="" type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Date of issuance of this report 10 July 2006 (10.07.2006) Authorized officer <div style="text-align: right; font-weight: bold;">Philippe Becamel</div> e-mail: pt12@wipo.int
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

REC'D 04 MAY 2005

PCT PCT

To:

ASTRAZENECA
Global Intellectual Property
151 85 Södertälje
Sweden

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year) 02-05-2005

Applicant's or agent's file reference

101258-1 WO

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/SE 2005/000013

International filing date (day/month/year)

05.01.2005

Priority date (day/month/year)

09.01.2004

International Patent Classification (IPC) or both national classification and IPC

C07D 211/70, A61K 31/445, A61P 25/04, A61P 25/22

Applicant

AstraZeneca AB et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further opinions, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/SE

Patent- och registreringsverket

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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/SE 2005/000013

Box No. I **Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language, _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/SE 2005/000013

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The question whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 9-10

because:

☒ the said international application, or the said claims Nos. 9-10
relate to the following subject matter which does not require an international preliminary examination (*specify*):

See PCT Rule 67.1.(iv): Methods for treatment of the human or animal body by surgery or therapy, as well as diagnostic methods.

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. _____
are so unclear that no meaningful opinion could be formed (*specify*):

☐ The claims, or said claims Nos. _____ are so inadequately supported
by the description that no meaningful opinion could be formed.

☐ no international search report has been established for said claims Nos. _____

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of
the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not
comply with the technical requirements provided for in the Annex C-bis of the Administrative Instructions.

☐ See Supplemental Box for further details.

International application No.
PCT/SE 2005/000013

1. Statement

Novelty (N)	Claims	<u>1-8, 11-14</u>	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	<u>1-8, 11-14</u>	NO
Industrial applicability (IA)	Claims	<u>1-8, 11-14</u>	YES
	Claims		NO

D1) WO 02094812 A1
D2) WO 9828275 A1

The claims disclose diarylmethylidene piperidine derivatives that are used for treatment of pain, anxiety or functional gastrointestinal disorders.

Documents D1-D2 disclose structurally closely related compounds with the same activity as the claimed compounds.

Document D1 which is considered to represent the most relevant state of the art, discloses structurally closely related compounds. The subject-matter of claim 1 differs from D1 (see the claims) in that the aminogroup in that the aminogroup is in para-position instead of in meta-position on the phenyl-group.

The subject-matter of claims 1-9 and 14 is therefore novel (Article 33(2) PCT).

The problem to be solved by the present invention in the light of document D1 is the provision of alternative diphenylmethylenedipiperidine derivatives useful for treatment of pain, anxiety or functional gastrointestinal disorders.

Document D2 show structurally related compounds, that are substituted in meta-position on the phenyl-group with an

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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/SE 2005/000013

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: BOX V

aminogroup and no substituent on the piperidine-nitrogen (see page 115). However, this document also show compounds without the aminogroup that are substituted on the piperidine-nitrogen with groups such as arylmethyl.

The applicant has not shown that the structural differences render the claimed compounds' unexpected effects in comparison with the known compounds'.

It is considered obvious to a person skilled in the art to modify structurally similar compounds to obtain the claimed compounds and come to the conclusion that they will have the same activity.

The processes for preparation, of claims 11-13, are generally known processes and these claims therefore lack inventive step, as do the intermediates of claims 14 that are obtained in these processes.

Consequently, claims 1-8 and 11-14 are considered to fulfil the requirements of novelty, but not that of inventive step.